FUSION 64

FUSION GREATS

We take a look at the best of the very best C64 games.

IN DISGUISE

The Commodore 64 had many looks over its life span – FUSION takes a look at the familiar and more obscure examples.

CONTENTS

Editor's Note

The Commodore 64 was the most popular and most successful 8-bit computer of the time and still, decades later, remains hugely popular with an active community of C64 fans and a plethora of developers, graphics artists and musicians still writing new games for the platform.

You are holding an issue of FUSION magazine solely dedicated to this wonderful computer; an issue given out free to each backer of the 2020 ZZap! 64 Annual Kickstarter and free to each subscriber of this magazine.

I am sure that looking at the cover of FUSION 64 still evokes the memories of playground battles of whose computer was best? Of course to the Commodore 64 owner their system was King, with a full functioning keyboard, a huge selection of games and the impressive SID chip that could blast out tunes whilst the games loaded. I said to Trevor Storey, I wanted the cover to be a space battle where the C64 was the mothership shooting down the 'enemy'. It seems that was enough of a brief for the ZX Spectrum and Amstrad to be drawn being blown to smithereens by the breadbin foe. I think Trevor is a Commodore fan!

I do hope you enjoy this rather special issue of FUSION, and if it accompanies your copy of ZZap! 64, well you can see how this cover compliments the one done by Oli!

Enjoy the issue!

Editor

Chris Wilkins

FUSION
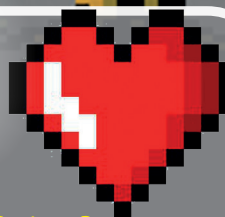
Game : IK+
Year : 1987
Author : Archer Maclean / System 3

Despite the bizarre decision to name this game in the US **Chop 'n' Drop**, **International Karate Plus** continues System 3's venerable IK tradition of having large, well-animated martial art fighters sparring with each other to score points with well-placed strikes. To up the stakes, IK+ makes it a free-for-all between three characters, allowing the two that score the most points to continue to the next round. To sweeten the deal the game has a ton of Easter eggs; like letting you change the background colours or the way the sun ripples in the water; initiating cute visual touches like a spider rapelling down the screen, or even some pants-dropping! The introduction of the third fighter does evolve the one-on-one fighter; granted, it's not a three player free for all (the blue fighter is computer controlled) but now with the option to take out both your opponents with a well-timed split kick, IK+ proves to be is immensely satisfying.

FUSION

ACTIVISION'S LITTLE COMPUTER PEOPLE

Article by Chris Wilkins

Little Computer People was, at the time, revolutionary and tried to sell the concept that inside every computer there were hordes of little people working away to produce what you see on the screen (In the case of the Amstrad the little people were clearly still observing the three-day week of 1974).

By inserting the game into your C64, you gave these people a way of communicating with you, as well as a well-deserved house to reside in as the game's case explains:

'Admit it. Haven't you ever wondered — even just for a second — what really goes on inside your computer? If so, then an important recently announced research discovery will be of special interest to you! The answer is fascinating. The discovery itself took dozens of researchers, hundreds of thousands of dollars, the most technically advanced equipment and years of scientific speculation and hard work. The precise process is based on an incredible, state-of-the-art piece of software. It's a unique fully equipped two and half storey "House-on-a-Disk". When loaded into a computer, it will not only draw out one of the Little Computer People but will actually become the Person's permanent residence."

From here on in, the experiment began with the 'gamer' (and I use that term loosely) watching the little computer person go about his daily life. He might read; he might buy a dog; or if you were lucky he might even write you a letter or play games with you. Each copy

Below: When the scientific research, I mean game, starts you fill in the cover of your notebook.

Above: Your little man going about his daily activities — looks like he is about to make a cup of tea!

of the game generated a random person, so players had their own, unique person to go all 'Rear Window' upon. A treat was in store for you if your little computer person decided to tickle the ivories as the music was composed by industry legend Russell Lieblich, who also worked on the music based Master of the Lamps flying carpet game. In fact, the sound on the game was sterling in general, and

Below: The rather odd looking advert for this title!
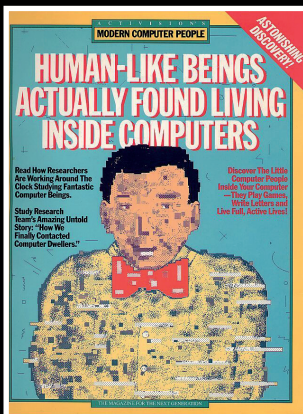
essential to further creating this little virtual world.

Essentially this game was a triumph as it created a world and a character that you wanted to watch — you cared if he wrote you a letter and you enjoyed every moment of his anagram games even if he did

gave valuable feedback on The Sims."

Little Computer People was ground-breaking, and yet, disappeared into obscurity for one very obvious reason. It went no further — no expansions were ever released despite plans to do so. As such the voyeurs among us would soon tire of the same responses.

With The Sims this was never an issue with almost too many add-ons and expansions offering a wealth of excitement from holiday destinations to dogs that pee on your rug!

Instead the title lost its

Below: Flattery will get you everywhere! And yes I am, a good friend and don't you forget it!

have some kind of preference for all things tumour related.

When Will Wright of Sim City and The Sims fame was asked by a CNN reader if he had ever played Little Computer People, he gave a clear answer:

"Yes, a long time ago. I've since gotten to know several people who were involved with that project, and many of them

sheen and now remains one of the rotting acorns in the retro forest hidden in the shadow of the dark, monolithic and slightly evil–looking Electronic Arts building.
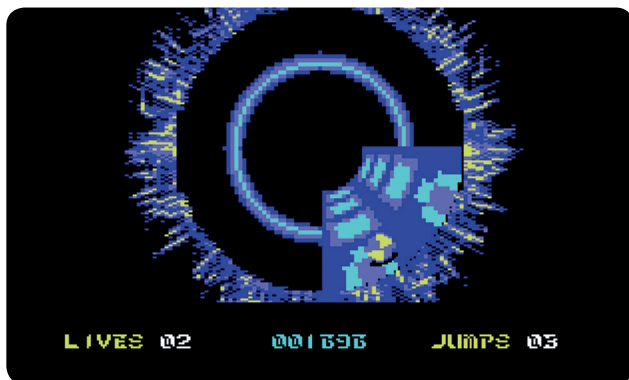
For now, consider it dug up and put within the FUSION 64 window sill for all to see in all its experimental glory. We at FUSION love it.

YOOMP! 64

MAT ALLEN AND ANDREW FISHER GO YOOMPING TOGETHER ON THIS ATARI/BULLFROG INSPIRED GAME!

Yoomp! started off life as an Atari 8-bit game, inspired by a classic 1986 title called Jump! and an early Bullfrog game Tube.

That Atari game went on to win the ABBUC Software Contest in 2007 and inspired Zbigniew Ross to attempt a C64 conversion. The basic gameplay sees the player controlling a bouncing ball through a tunnel that appears in 3D from the centre of the screen. The controls allow the ball to bounce clockwise and anti-clockwise. Pressing Fire while airborne makes the next bounce a 'long jump' to clear more ground; there are a limited number

Left: All games from RGCD grace glorius box artwork — this one is no different.

Above: The hypnotic tunnel that one must travel down — watch out for those tiles!

of long jumps per life (shown bottom right, along with the current score and remaining lives).

The ball must avoid the black squares and holes in the tunnel, as hitting these sends the ball back to the start of the current level and a life is lost. There are also many types of special tile that are encountered along the way — speed up and slow down tiles affect the next couple of bounces; left and right arrow tiles force the ball in that direction; the double forward arrow tile awards another long jump while the single forward arrow makes the next bounce longer. The booze tile (symbolised by a bottle) temporarily makes the player lose control; earthquake and lightning tiles are

LIVES 03   000828   JUMPS 03

designed to distract the player; the + and − tiles adjust the tunnel's lighting making tiles harder to spot; teleport tiles move the ball from one side of the tunnel to the other, pause and resume stop and start the tunnel's movement and (deep breath) a smiley yellow face awards an extra life.

There are a total of 23 terrifying and twisting tunnels

Below: The cartridge game comes with card, sticker and instructions —look it up on the RGCD website.

to conquer and completing a level gives a password allowing play to restart on the next level. These four-letter codes can be entered with keyboard or joystick, making the game C64GS-compatible.

I hadn't heard of the Atari original until news of this C64 port broke, but as a fan of Trailblazer and Cosmic Causeway then I made sure to keep track of it until release. The 3D tunnel effect is mighty impressive and generated using multiplexed expanded sprites, that while having a slightly blocky nature, allow for smooth hardware scaling.

Above: Lets do this level in fetching green. 3 lives left with just 3 long jumps to get you out of trouble.

However, the game is never that fast paced, more think than do. The difficulty gradient is fair, with the first two levels easing you into proceedings before the game starts to get a little evil, and the password system allows you to bypass those you've already conquered. With 23 levels in total, it may take a while!

In conclusion, Yoomp on the C64 is a fabulous realisation and will give even hardened gamers quite a challenge.

TOPFIVE>>

02 // Wizball

Combining a shoot 'em up and painting by numbers, ZZAP! 64 awarded Wizball 'Game of the Decade'. Initial difficulty is overcome with a couple of power-ups, with the player soon mixing paint drops to restore colour to the landscapes. This is all backed by a memorable SID score from Martin Galway.
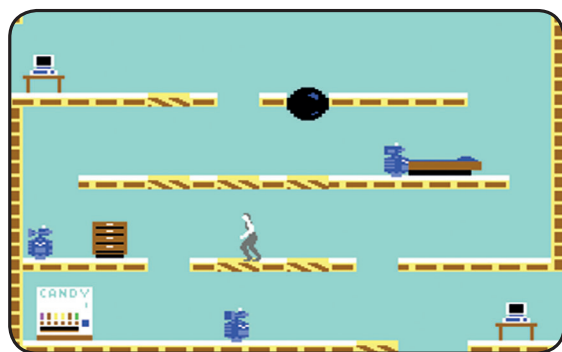
04 // Impossible Mission

With a madman threatening the world with nuclear weapons, a somersaulting secret agent must infiltrate the bunker and stop the launch. Dennis Caswell's unique mix of platform game (with random placement of the rooms) and puzzles (to discover the password) remains highly playable, with the hero's fluid animation and the inclusion of sampled speech staying in the memory. Destroy him, my robots!

01 // Paradroid

Uridium, also by Andrew Braybrook, is fondly remembered by C64 fans but it is Paradroid's mix of strategy and robot blasting that left a far longer impression.

The Influence Device (robot #001) must destroy or take over — via a clever mini-game — the rogue robots running amok on a fleet of Dreadnoughts. The graphically minimalist radar-style display and line-of-sight mechanics helped build the atmosphere and tension.

so says Andrew Fisher

03 // The Sentinel

8-bit programming legend Geoff Crammond created 10,000 landscapes to explore in a first-person view, with one aim — defeat the vigilant Sentinel without losing all the robot's energy. A tense atmosphere is built by the slow movement and sparse sound, but climbing upwards to conquer a level and surveying the world below feels like a true achievement every time.
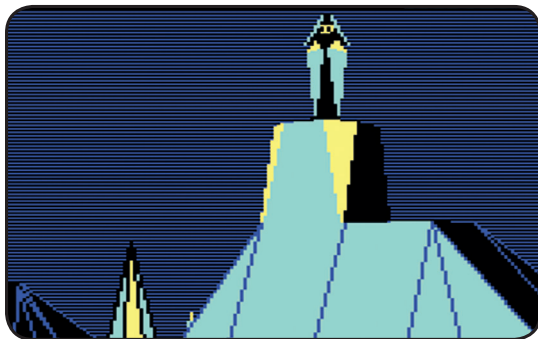
05 // California Games

Filled with six radical events, this was the pinnacle of the Games series from Epyx. The events including Half Pipe, Roller Skating, BMX racing, Footbag, Flying disc and Surfing, as seen in the picture to the right. The game sold more than 300,000 copies in the first nine months and was by far the most succesful game that Epyx produced. On the C64 each event was loaded individually.

FUSION
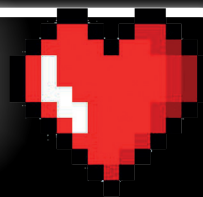
Game   : Bubble Bobble
Year   : 1997
Publisher: Firebird

Taito's Bubble Bobble was a huge hit in the arcades, with its cutesy graphics and addictive one-more-go gameplay, it proved popular with everyone. The C64 had its fair share of arcade conversions but Software Creation's Bubble Bobble ranks amongst the best due to its faithful capture of the spirit and charm of the arcade original as well as including a fair share of the bonuses and Easter eggs that littered its levels.

Playing as Bub or Bob in this one or two player game, each level has to be cleared of enemies by first blowing a bubble to capture them in, which you can then pop with a gentle nudge of your spiky dragon head. Bursting bubbles shower the levels with fruit and magic items that give extra speed, transportation to later levels or extending the range that bubbles can be blown.

The 'plinky' music of the arcade version is captured perfectly by Peter Clarke, adding to the charm of this excellent and much loved conversion.

TOP

20000

CREDITS
9

Article by Gordon King

TOP 10

64 HOMEBREW HEROES

10 — Rocket Smash Ex (RGCD)

Jetpac, one of the most popular arcade shooters of a generation, never did find its way onto the C64. There was one in the works, but that was sadly canned by Ultimate. Rocket Smash Ex finally gives the C64 the game that it deserves and this is a brilliant take on the original.

This re-imagination gives it a gorgeous lick of paint, an earworm of a tune and a more sensible learning curve. The premise is still the same; help your astronaut reassemble his

broken craft and refuel it. This would be a lot easier if it weren't for meteor showers and aliens. Excellent shooting fun that is instantly accessible.

9 – Bomberland (RGCD)

The original (and best) 'Battle Royale' game gets an unbelievably stunning version of Bomberman for our beloved C64. Superb graphics, a stunning SID soundtrack and five simultaneous players (adaptors required) makes this one of the best versions of the game out there. It also comes with a brilliant single player mode, but its multiplayer where the game is most fun.

This game was 10 years in the making and worth every bit of the wait.
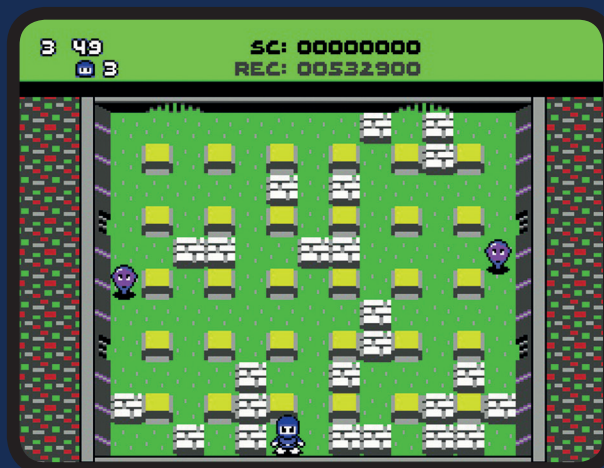
8 – Bear Essentials (Pondsoft)

Winter is fast approaching, and Bear has been far too much of a lazy sod to get enough grub for himself and the missus to last them through to spring. The result is an old school platform game where you have to explore the forest and gather 326 apples. This is no mean feat — there are hazards galore. Fans of this genre will be delighted at the challenge and will lap it up. Manic Miner aficionados need to give this a go, especially when access to the mine is opened up.

7 – X Force (Psytronic)

Shmup fans who are looking for something slick, fast and a challenge (aka difficult) need to check out X Force.

The C64 with its silky smooth scrolling and excellent music is the computer of choice for this frantic genre. Think R-Type, think Nemesis: if these titles are synonymous with your shooter upbringing, then you need to get this loaded up.

It does what it says on the tin.

6 – Hibernated 1 (Pondsoft)

It has been a very long time since an adventure felt enticing enough to delve in to a text only world. Hibernated is an exceptional tale set in space where you awaken from a cryo-pod prematurely and discover that your own craft has been consumed by an alien vessel. This is an amazing tale and, of course, not only do you have to battle aliens — you have to battle the challenge of the text parser too — but that's part of the charm. A compelling story and this is part one of a trilogy. I got to the end of this text without saying 'interactive fiction'. Such a dirty modern word. Long live the text adventure.

5 – Tenebra Macabre (Magikeyric)

Raiding crypts isn't solely for Miss Croft, you know! Meet Mega Meghan — she delves headfirst into these darkened catacombs. The trouble is, she was in such a hurry this morning that she forgot to bring a torch with her. The player must navigate the darkness, using only a small halo of light which surrounds the character. With the occasional flicker of lightning, candles in the room must be located and lit; thus illuminating the place. Think Rick Dangerous, minus the visibility. That's what Tenebra Macabre is.

4 – Joe Gunn (Psytronik)

Joe Gunn may not have Indiana Jones' cool name, but he does don a cool Fedora.

In this brilliant title, Joe must find the secrets of a newly found tomb. What mysteries are contained within? This game has a real old-school feel to it and it's so much better for being so. It can be a little fiddly to start of with, but once the player gets the hang of the jumping mechanics, they'll be exploring every inch of the pyramid.

3 - Wolfing (Matthias Bock)

This is one exquisite platformer where you take on the role as Ling, a poor lass who has been imprisoned by a fearful Baron who knows of her dark lupine abilities. In order to escape the dungeons, she must embrace her inner wolf and morph between the 2 states in order to escape. This game contains brilliant level design, gorgeous animations and a brilliant soundtrack. It doesn't get much better than this.

## 2 – Caren and the Tangled Tentacles (Prior Art)

This is an outstanding point and click adventure done in the same vein as Maniac Mansion and Zak McKracken. This is also one beautiful looking game with fantastic puzzles. The FUSION team don't want to give away the story, as spoiling that gives away some of the mystery.

   These games are always best played going in blind. Class in a glass with this one.

1 – Sam's Journey (Protovision)

Representing the new commercial era, Knights of Byte has delivered the best platform game since 1993's Mayhem in Monsterland. Featuring superb sprites, beautifully themed backgrounds and huge secret-filled levels to explore on the colourful world map. Sam's cute costumes and changes of control method add real depth. The quality of the physical edition matches the quality of the game itself. Oh and the in-game music is some of the best that SID has ever produced.
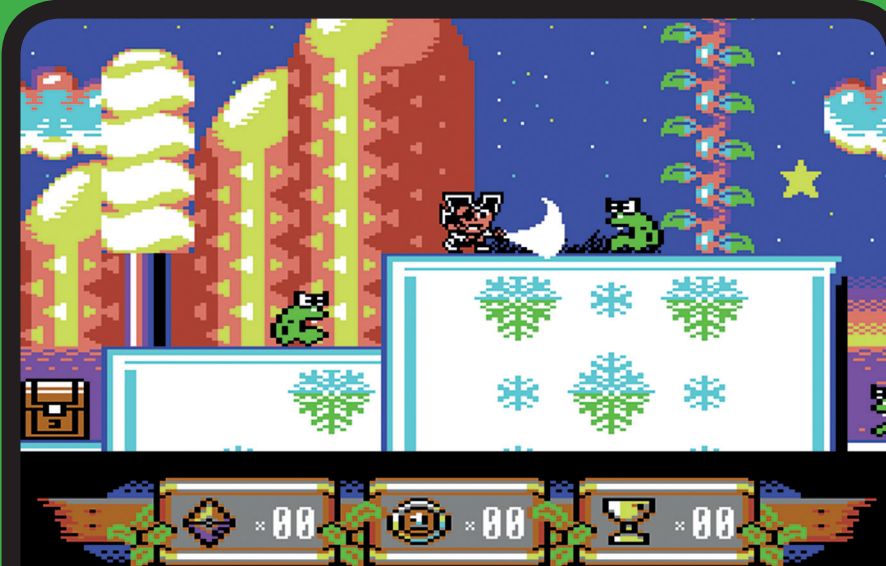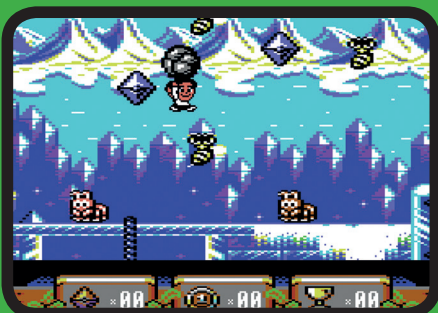
It writes, rates, creates, even telecommunicates. Costs less, does more— the Commodore 64.

When Commodore introduced the 64, the industry suddenly realized that there would be a computer in every home, school and business <u>years</u> before anyone ever dreamed.

That's because Commodore 64 halved the price of high technology: while you can compare the 64's capabilities with those of any sophisticated business PC, you can compare its price with that of an average television.

What can you do with it? Create with its high resolution Sprite Graphics. Add a printer and type with it. Add a disk drive to use spread sheets and other financial programs. Learn and play music through your home sound system on the 64's professional quality music synthesizer.

Add a modem, and hook up with the vast computer networks through your telephone. In short, the Commodore 64 is the ultimate personal computer, at a price <u>you can afford.</u>
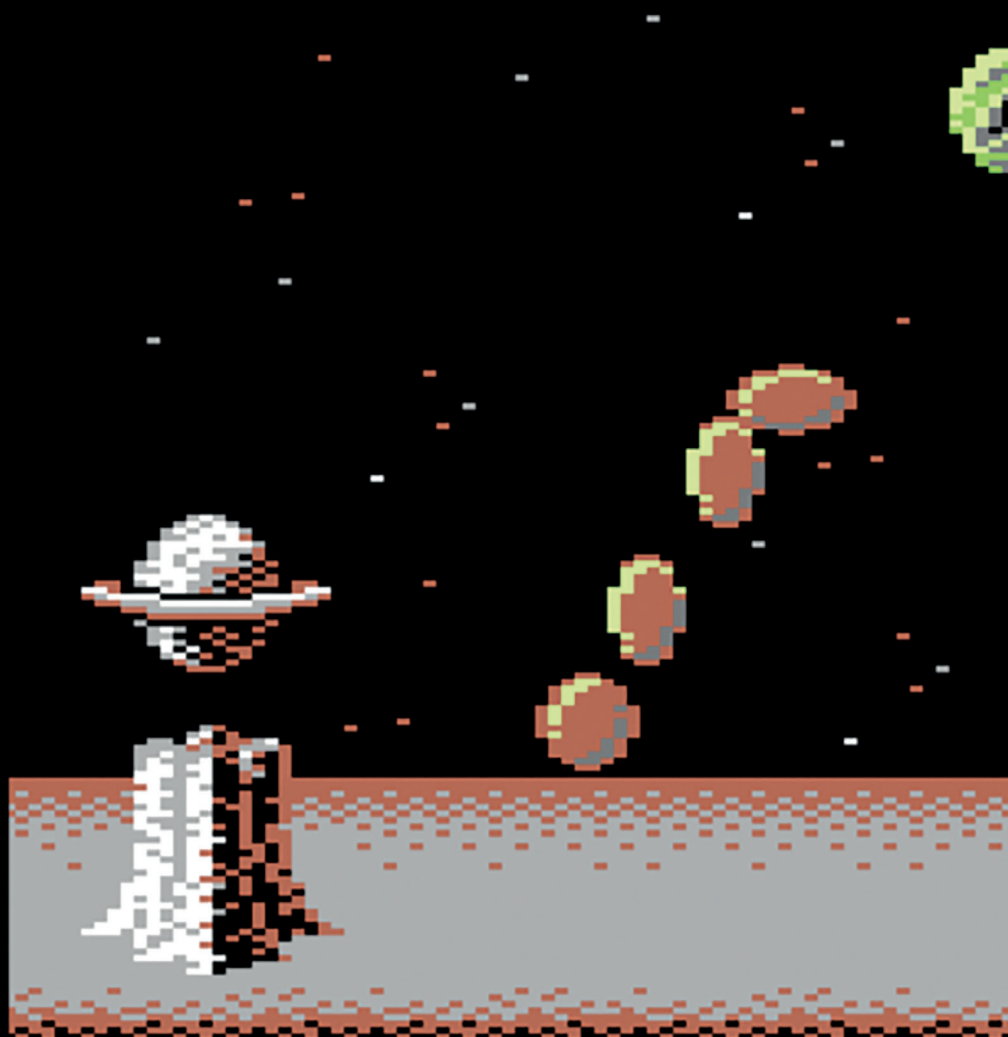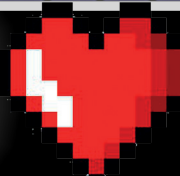
COMMODORE 64

FUSION

Game : **Wizball**
Year : **1987**
Publisher: **Ocean Software**

Sensible Software had impressed Ocean Software with its first game Parallax, so both decided to work together again on Wizball, a painting by numbers shoot 'em up. At the start of the game, the 'smiley' ball bouncing around the grey landscape is pretty hard to control, but collecting the green pearls gives vital power ups — starting with thrust and anti-grav and then extra weapons. The third power-up is the vital 'catellite' companion that allows the player to collect falling drops of colour. These are stored in cauldrons and are mixed to colour in the level — three different shades needed to complete each of the eight levels.

With a variety of enemies, a tricky bonus section and brilliant music from Martin Galway (including two tunes based on real guitar work by Jon and Chris), Wizball scored highly with the magazines and is best appreciated on the C64 — the game's original format. The Amiga sequel, Whizkid did not share the success of the original.
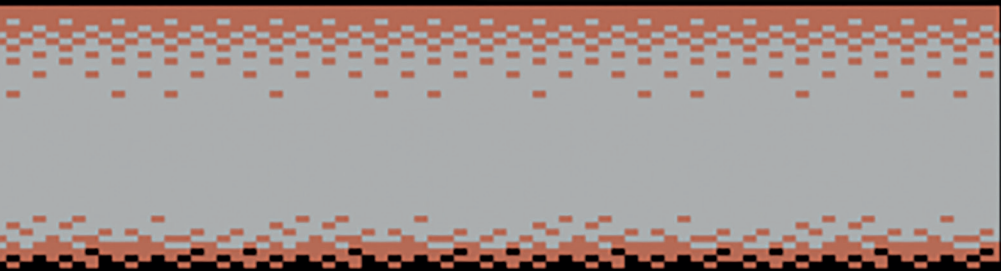
ZZAP! 64

■ GREATEST BLAST EVER? Shouted the coverlines for Zzap!64's third cover — Archer Maclean's Dropzone, of course. Many readers rated Oli Frey's first cover for the game Elite, but in fact he wasn't so thrilled by it. 'It was all so rushed because the decision as to what to feature on the cover was left until the very last minute,' he says on reflection. 'I had a lot more time for the third issue and decided that I wanted to do something generic, a space-city battle and be damned as to what game editorial might want on the cover at the last minute!'. Oli had little hesitation as to his inspiration. Ridley Scott's extraordinary visuals for Blade Runner had lived on in the two and a half years since its September 1982 release (June in the US). 'I saw the film in one of the big West End cinemas in Leicester Square and later on VHS (remember them?) several times after moving to Ludlow.'The image ideally suited the Frey format — smoky darks and blinding white trails of exhausts and spluttering rocket fire and laser blasts. 'It was Blade Runner in feeling more than in representation and called out for a deal of masking tape and masking fluid to create the bright highlights and tons of airbrushing. And then the decision came down the line. Dropzone was to be the cover, a game with a jetpacked hero blasting away at Nemesites, Androids and Anti-matter while dropping off men to the planet surface — er, not quite what had been painted. "Never mind," we said up in the Zzap! Towers art department.

Putting in those big cover lines sort of papered over the disconnect nicely, especially followed by the sub-heading of DROPZONE rockets in from UK Gold!'
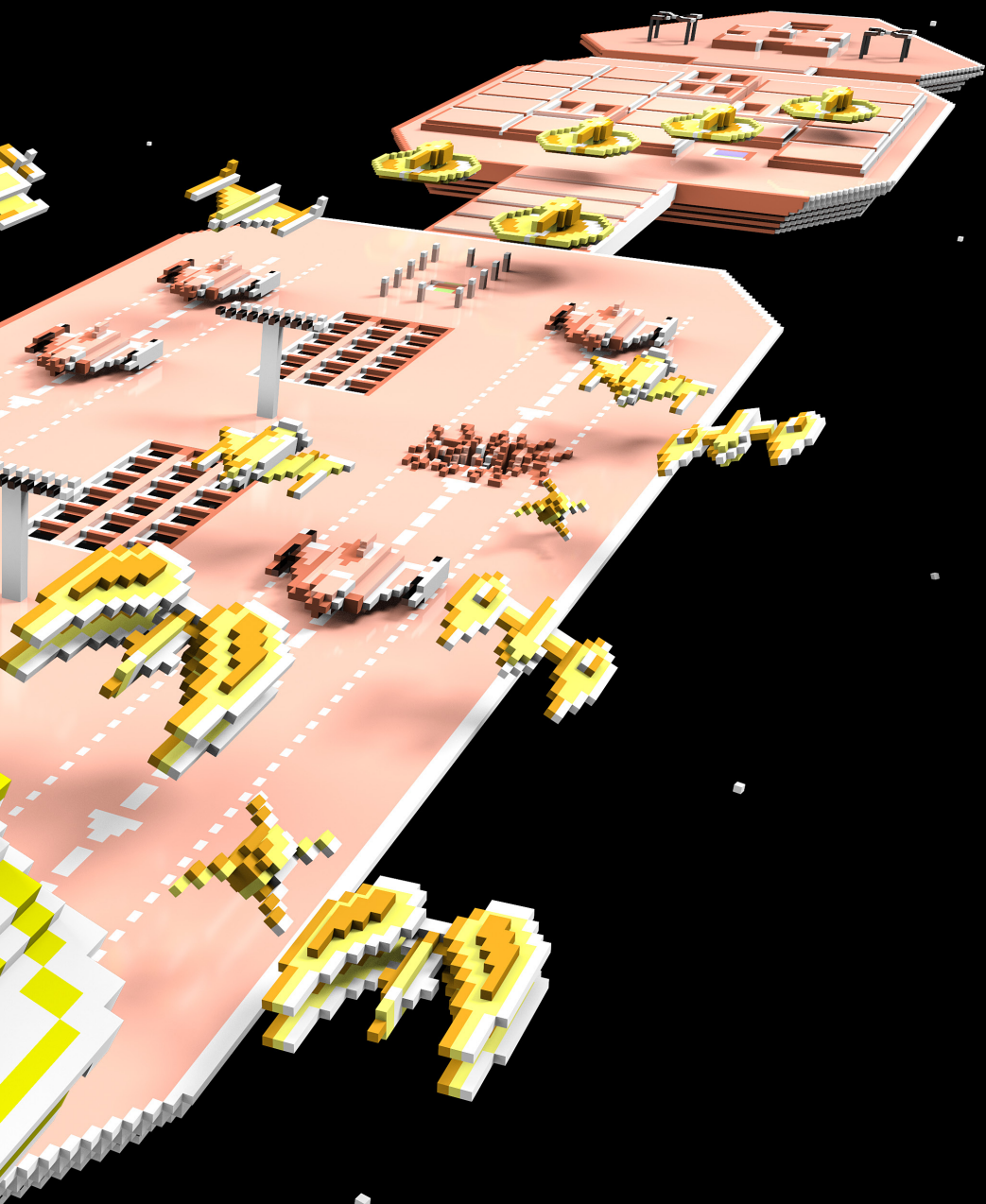

Above: Oli very recently signing issue #6 of FUSION — you can see the cover of the ZZap! 64 2019 Annual on the right facing page. Did you know Oli was left handed?

ZZAP!64 Issue 3 (July 1985) – Oli does Dropzone!

Uridium – by Mike Berry

Article by Mat Allen

THE WORST OF THE WORST

Maybe you're new to the whole Commodore scene. Maybe you recently purchased a C64 Mini. Maybe you used to own the computer and a pile of tapes in the 1980s and are coming back to it now you actually have some decent disposal income. Whatever your circumstances, there are a staggering number of games available for our beloved breadbin.

While there is an abundance of gems found within its vast catalogue, there are also some stone-cold turkeys you should do your best to avoid.

THE FURTHER ADVENTURES OF ALICE IN WONDERLAND
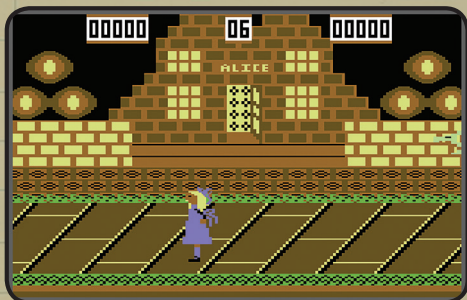
The first budget title in the list, and a rather unusual one at that. The game itself, what you can play of it, is alright though nothing inspiring. The problem lies when you complete level one and want to progress to level two. As it was apparently freeze-framed off the original disk for mastering to tape, none of the code was changed. So the game crashes attempting to load from disk leaving you with a few minutes gameplay at most.

Quality control at its best.

CLOSE ENCOUNTERS OF THE WORST KIND

Most of you dear readers will probably not have heard of this title, and for good reason.

Released on cartridge only in the US by Mr Computer, whose output overall was written almost entirely in BASIC, Close Encounter struggles to decide what it wants to be. Shooter? Dodge 'em up? Aurally irritating? Who knows, that mystery will probably remain unsolved.

The most exciting thing you will realise about the game is the box art, and that's not saying much.

BOB WINNER
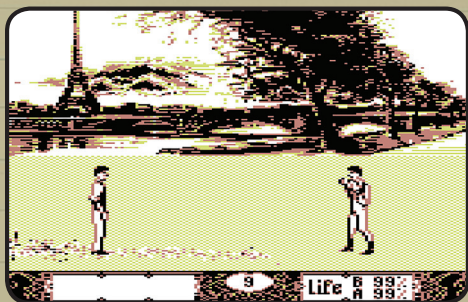
Once you manage to stumble through the instructions, a delightful mix of confusion and Franglish, then attempt to play the game you realise that matters aren't much clearer. Neither were the backgrounds, a subtle mix of three random colours thrown together painting famous landmarks, or the rhyme and reasons for dying during the exploration sections. Sections of the game try to convince you deserts and giant bees exist between London and Paris. In conclusion, Bob Winner wasn't.

CISCO HEAT

There are a few arcade conversions in this list, and with good reason. Aside from the ludicrous premise of the Cisco Heat, it seems the streets of San Francisco must be tarmacked with treacle. The graphics look like they've come from Lego headquarters and update slower than a Freescape title. There's no sense of speed, control or fun. You can happily ram all the other vehicles without appearing to crash out. Even WEC Le Mans is better, which is the sole reason why that game isn't in the list!

FINAL FIGHT

We loved the arcade machine, but the chances of the Commodore pulling off a good conversion were akin to Satan skating to work. It wasn't even a mediocre attempt. The characters control like it's Metro City on ice, and occasionally appear to be contorting themselves more than a female gymnast. The final ignominy was receiving a lower rating when released on budget compared to original full price! Best description of it rhymes with Fight however.

GERTIE GOOSE

Reelax Games started with a whimper, vented its spleen in Zzap!64 for the poor ratings of its output, and died soon after. The Newsfield lads were bang on target, as Gertie Goose is a horrendous pile of anatid droppings, masquerading as some sort of digital entertainment. The graphics are horrendous with the worst colour combination scheme since Stevie Wonder attempted home decorating, and audio liable to send cats scrambling for the hills.

HARD DRIVIN'

KNIGHTRIDER

This game never got a full price release, instead first appearing on the Wheels of Fire compilation before popping up on the Hit Squad label some time after and with good reason. Just another title that was in progress and going absolutely nowhere, abandoned, then handed off to another team who literally had weeks to produce something vaguely resembling the source material. At least the final game looked like the arcade, if in one colour and running at two frames per second.
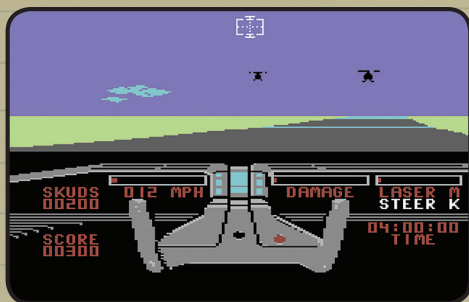
Horribly delayed, waiting upon waiting, promises made and broken, then the final delivered result was a compete anti-climax that no one was happy with. And we're not talking about Brexit.
 It's hard to state exactly what went wrong with Knight Rider, apart from the obvious 'all of it', and the gasps of horror from those unfortunate to buy the game probably rhymed with 'clucking bell'. The fact the 'companion' Street Hawk licensed game never materialised is probably a small mercy.

INTERGALACTIC CAGE MATCH

ROBOBOLT

This one's included as a gift to a certain other Zzap reviewer, although it must have been so bad that the magazine never actually reviewed it back in the day. You can confidently state it did what it said on the tin — it's intergalactic, in a cage, and a match takes place — but when playing this game you will ooze disappointment and bitterness at money you wasted on it. It missed that viatal component of gaming — FUN!
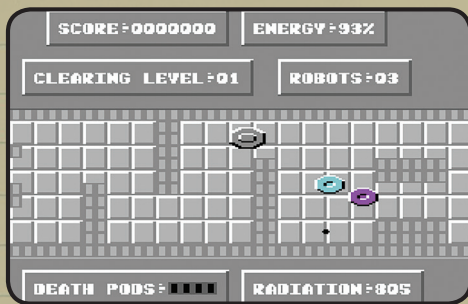
May we present this abomination from Alpha Omega which scored an almighty 3% from Zzap! 64 back in the day. Was the score justified? Damn right it was. A turgid train-wreck mess of a scrolling arcade collect-em-up with no redeeming features whatsoever. Apart from maybe the title track, that was bearable. Gameplay less exciting than paint drying and graphics greyer than John Major sealed this game's status at the bottom of the pile.

LEE ENFIELD IN THE TOURNAMENT OF DEATH

More like Lee Enfield in the pokey-sized playing window of death. What you are presented with, to break up the slow dreary monotony of limping around the dull-looking castle, are gaudy Lego-like characters supposedly engaging in combat but instead look like they are performing a camp Morris dance in the vain attempt of hitting each other. All accompanied by a soundtrack of what I can only think is a wasp stuck inside a Vespa.

PETER BEARDSLEYS INTERNATIONAL FOOTBALL

The C64 was blessed with a number of excellent football games, but this wasn't one of them. The player sprites appear as if they were perhaps modelled on Peter himself, but that isn't a very flattering look in reality, and they move about like they are riding invisible bicycles. Even the ancient International Soccer plays way better than this! The choicest words to describe the game are probably close to ones Peter used himself before getting sacked by Newcastle..

So there you have it, hopefully our hours of mind-numbing suffering will mean that you don't have to experience the pain and horror that we did to bring you this list of 'games'.

That is unless you derive a certain pleasure from awful graphics, crappy sound and shoddy game play, in which case... have you ever thought of owning a ZX Spectrum? You would fit in perfectly! (just kidding folks!).

commodore 64

HARDWARE

GUIDE

Article By Andrew Fisher

System: ULTIMAX/MAX MACHINE
Year   : 1982

The Max was launched in Japan before the C64, but proved to be a flop. Inside its silver case — under a membrane keyboard similar to the original PET — were all the same chips but with just 4K of RAM. Running BASIC from cartridge reduced that even further. The C64 has an Ultimax mode allowing backwards compatibility with the earlier machine's cartridge games.

System: Breadbox
Year : 1982

Perhaps the most familiar form, referred to as the breadbox or breadbin for its rounded shape. Retaining many of the VIC 20 features, it also includes the PETSCII graphics on the front of the keys. The famously chunky 1541 drive matched the breadbox in colour, but ran slower on the C64 as Commodore's engineers wanted to ensure compatibility with earlier machines including the VIC-20. Options to speed up the drive included fast loader cartridges and modifying the drive with a parallel cable.

System: PET64/EDUCATOR64
Year : 1984

Another example of cost saving, these machines were designed for US schools and housed the C64 motherboard in a PET metal case. The built-in monitor was black and white, meaning different start-up colours from an alternative ROM version.

System: EXECUTIVE 64, or SX-64
Year : 1984

The name stood for Single eXecutive, referring to the 1541 drive included in the case (with plans for a Dual eXecutive shelved). The portable device actually required mains power and did not have a battery. The keyboard acted as the lid, covering the 5" colour LCD screen — an impressive piece of technology for the time. The ROMs were different too, changing the start-up colours and removing support for the cassette deck. The heavy weight and lack of battery really counted against the machine for business users, but it remains highly collectible.

System: C128
Year : 1985

Commodore's marketing
centred on calling this
three machines in
one. There was the
new 128 mode, with
80-column support,
a built-in machine
code monitor and BASIC
7.0. Typing GO64 or holding down the
Commodore key on start-up switched to 64
mode; it took Bil Herd and his engineers a lot of work
to make it as compatible as possible with original C64 software
and hardware. Finally, there was the CP/M mode for business software
— which required the upgraded capacity of the 1571 floppy drive (capable of
reading both sides of a 5.25" disk). Early C128 models came with the classic 6581 SID chip.
The large wedge-shaped keyboard unit echoed the early prototype design and the P128, and the
shape of the C128 would have a clear influence on the later Amiga 500.

System: C64C
Year : 1986

Commodore's profit margin on each new C64 was high, but
with effort from the engineering team a new coat-reduced
model would be even more profitable (by reducing
the number of RAM chips and using new ceramic
manufacturing techniques). This was all housed in
a new grey case with matching grey keys. Inside
were the revised VIC and SID chips; by following
the original data sheets the 8580 SID removed
'circuit noise' and caused some forms
of sampled sound to be played at
a quieter volume. 1988 saw the
launch of the even cheaper
C64CR model, with plastic
clips replacing the case
screws. Peripherals were
re-designed to match,
include the slimline
1541-II drive (smaller
thanks to an
external power
pack).

System: GOLD Edition
Year   : 1986

Commodore Germany wanted to celebrate one million sales of the C64. The end result was a gold-painted C64 (in the classic breadbox form) on a circuit board-style background. One thousand were produced, with the first one hundred given to Commodore employees. Sadly there have been several fakes circulating on auction sites.

System: C64G
Year   : 1986

Commodore Germany also created this revised model of the C64, housed in the old rounded case and with white keys. The motherboard inside was actually the later PAL version with an 8580 SID.

System: C64ALDI
Year   : 1986

This was a special limited edition of the C64G, only sold through the German supermarket chain Aldi. Once again it had the white keys and new motherboard (including the 8580 SID) in an old case.

System: OLD BOARD, NEW CASE
Year   : 1986

A company in Australia devised an interesting case replacement. It was designed to house the original C64 motherboard and keys in an angled case that closely resembled Commodore's new C64C case. This means you can find what looks like a C64C but with the brown keys of an original C64. Stockists in the UK and Europe also sold this case.

System: C128D and C128DCR
Year   : 1988

While Commodore redesigned the Amiga 1000 from a PC-style base unit and keyboard to the all-in-one Amiga 500, the C128 underwent the opposite transformation. The C128D model has a base unit incorporating a 1571 disk drive and the computer motherboard, attached to a separate keyboard by a coiled cable (as commonly seen on PCs of the day).

System: C65
Year   : Not Released

Commodore engineers were looking for a product to bridge the gap between the C64 and the Amiga. One such project was the C65, with a higher graphic resolution and a built-in 3.5" disk drive (based on the 1581 drive). With management changes and the eventual bankruptcy of Commodore in 1994, the machine never made it to market. Some of the three hundred prototypes were sold off to an American wholesaler and made their way into the hands of collectors. The C65 remains an expensive curiosity as there is little compatibility between the discovered machines and existing software, but recent online auctions have still commanded a high price tag (in the thousands of pounds).
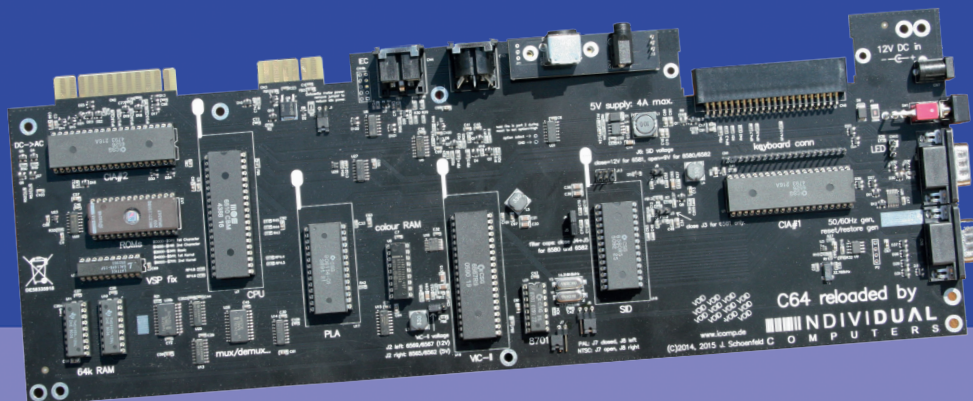
System: C64DTV
Year : 2005

Jeri Ellsworth's hardware skills were put to use by toy company Jakks Pacific in association with Commodore license holders (at the time) Tulip Computers. Following the trend for plug-and-play joysticks, the DTV (Direct To TV) featured 30 built-in C64 games and a BASIC option. Being a hacker, Jeri included soldering points to add a keyboard and disk drive and there was a dedicated DTV hacking scene. Several of the games would appear again on the THEC64 Mini, and there were hidden extras including the 1K RPG Minima and a photo of the development team. It first went on sale through American shopping channel QVC, which ironically had taken over the former West Chester home of Commodore. A revised version of the hardware powered the Hummer DTV game, which can be hacked to play C64 games.

System: C64 RELOADED
Year : 2005

Individual Computers launched its replacement motherboard in 2015 and then upgraded it for version 2, with zero-insertion force sockets for the chips and no need for jumpers to change chip settings. The user needs to supply the CPU, VIC chip and (one or two) SID chips; the board will recognise PAL/NTSC and configure capacitor settings for the SID chips. By installing a second chip, stereo SID output is possible (with three selectable addresses for the second SID). Video output is only via an S-Video connection and 3.5mm audio jack, as the board does not have an RF modulator. The whole board has reduced power consumption and runs from a 12V supply; the power switch has an extra function as a built-in reset button.

System: C64 Mini
Year   : 2018

The original crowd-funding campaign from Retro Games Limited aimed to produce a full-size replica of the C64, with a working keyboard, USB ports and HDMI output. Grand plans included a working cartridge port and full compatibility with existing software. When the campaign did not reach its target, production switched to the C64 Mini, based on FPGA technology. This gave a good quality of emulation, and backers who ordered the full-size THEC64 were given a free Mini as compensation. The Mini then went on general sale to help raise funds for the full-sized version. The Mini comes with 64 licensed games and Commodore BASIC built-in. Firmware upgrades have increased the ease of use, along with adding new title Galencia. The device has two USB ports for either storage devices or USB controllers. Each Mini comes with a USB-connected joystick, shaped like a classic Competition Pro with extra buttons for accessing the Mini's options (such as loading and saving states, and using the onscreen virtual keyboard; the USB ports can also be used for a keyboard as the tiny keys of the Mini are not functional).

System: THEC64
Year   : 2019

Retro Games Ltd. has continued their efforts to build a full-sized THEC64 with a working keyboard, under license from Cloanto. At the time of writing the release date of 5th December 2019 has been announced and pre-orders have opened with various retailers. The new joystick is micro-switched, and the carousel now includes VIC-20 emulation along with some classic Jeff Minter games for the C64's older brother. Although it does not include the cartridge port or serial IEC ports from the original crowd-funding designs, the anticipation for this new form of C64 remains high.

System: Ultimate 64
Year   : 2019

Gideon Zweitjer impressed C64 users with his 1541-Ultimate cartridge, a solution for emulating the 1541 disk drive and offering access to faster USB and SD storage. That project became the basis for his Ultimate 64 motherboard, offering USB ports and a built-in 1541-Ultimate. It also includes native HDMI output for attaching to modern monitors and TVs.

If you are a regular reader of FUSION then you know the format of these 'Heaven and Hell' articles. We pick a system and tell you, dear reader, the joys and pitfalls of owning a system. Usually this is not a particularly difficult task but with the Commodore 64 it's actually quite hard to not say the same things that have already been written about in the past. A machine that is in the Guinness Book of Records as the largest selling single model computer in history. How do find a new way to try and impart the fact that there are estimated to be over 10,000 titles released for the system, with new games still being produced in ever greater numbers? What else can be said that already hasn't been said about the now legendary SID chip on which some incredibly talented people created music that was not only way ahead of its time, but is still loved to this day. You need only look at popularity of the recent 8-bit Symphony event that took place in Hull to realise how loved it is. So, let us just say this. If you have never owned a C64 before and regardless of any playground prejudices you may still harbour; do yourself a favour and go and find a C64 system to play with. It's doesn't matter if it is an original system, an emulator or one of the new TheC64 systems, all of them will give you a chance to play some incredible games

HEAVEN & HELL

Ok, let's stop being all dewy eyed. If we are honest, the Commodore 64 is a well built and reliable system but it is not without its problems. Ironically, the biggest issue with the C64 is not actually the C64 itself but the power supply that is needed to run it. I'm sure many people remember the old 'cheese wedge' PSU that also doubled as a foot warmer. This was the time before switched mode power supplies were common which meant that it generated a lot of waste heat, hence why it got so warm. Now imagine that heating and cooling cycle over the lifetime of the system and you can probably guess what eventually happens. When the PSU finally fails, and it is only a matter of time, it tends to dump a lot more voltage into the C64 than is healthy which will almost certainly kill your C64 in a puff of magic smoke. If you are lucky it might be repairable, but most of the time your computer will have gone to silicon heaven. Buy yourself a modern replacement PSU as a priority.

The other pressing issue with the C64 is the lack of spare parts out there to repair the broken ones. It's not uncommon for less scrupulous people to realise that a working C64 actually has more value as spare parts and will strip them down for its components. The result is C64 'bits' that can be really expensive (SID chips are becoming very pricey) and we end up with even fewer complete working systems out there.

FUSION's recommendation

You need a C64 in your life but please buy a new power supply for it first.

THE STORY BEHIND...

Philip Oliver, yes one of the Oliver Twins, interviews Jonathan Temples, about his experiences of creating graphics for many Commodore 64 games. He even did some Dizzy games.

Philip Oliver: Hi Jonathan, let's start with how did you get into making graphics for games and when did you do your first C64 game?

Jonthan Temples: I started off first making graphics when I was around 12 years of age on my Commodore Vic 20 that I had for a few years. I hadn't many games or money to buy games so I typed in games listings from magazines.

Once I had a Commodore 64 I used Anthony Crowther's sprite and character editor which was typed in also from a magazine (Your Commodore - I think?). My cousin David designed his own block editor for the later games like CJ's and Nobby The Aardvark which used a 2x2 block map to save memory.

PO: Just how many games did you do the graphics for on C64?

JT: Most websites will say 13 but if you include Spellcast our hack and slash game which was only seen on a ZZap! 64 cover tape then it's a total of 14.

Here's all of them in the order I worked on them. Spellcast (ZZap64 1991), CJ's Elephant Antics (Codemasters 1991), Spikey in Translyvania (Codemasters 1991), CJ in the USA (Codemasters 1991), Panic Dizzy / loading screen (Codemasters 1991), Phileas Fogg's Balloon Battles (Zeppelin Games 1991), Miami Chase (Codemasters 1991), Bubble Dizzy (Codemasters 1992), DJ Puff Volcanic Capers (Codemasters 1992), Nobby the Aardvark (Thalamus 1992), Cue Boy (Codemasters 1993) and 1st Division Manager (Codemasters 1993).

**PO**: Did you play a lot of C64 games? If so what were your favourite games?

JT: Some of my favourite games were US Gold's Time Tunnel, Firebird's Thrust and Elite's Commando and Ghost 'N' Goblins. Once I got myself a 1541 Drive I then enjoyed EA's Project Firestart, which I still play today on the same machine and drive.

PO: Were there other artists on the C64 that inspired you, and if so who?

JT: The artists that blew me away were DOK, Hugh Riley and Bob Stevenson. My cousin

Left: Nobby the Aardvark published in 1992 by Thalamus.
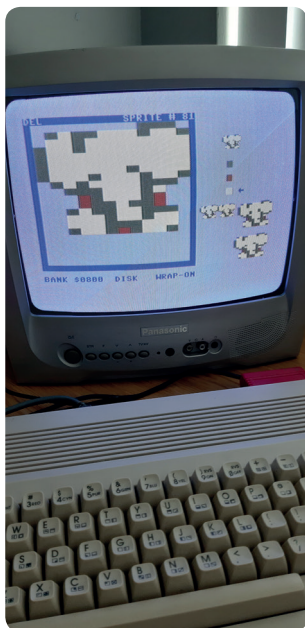
David loved playing System 3's Myth, but I was stunned at what Bob Stevenson did with every pixel — to me he was the pixel master.

PO: What do you think the best graphics were on the C64 graphically?

JT: Well to me that's a tricky one as I loved the simplicity of Firebird's Thrust and US Gold's Time Tunnel but if it's the best then it's between Bob's Myth and Hugh's The Last Ninja.

PO: You are credited in games under a few different names; sometimes Jonathan Temples and sometimes Jon or Jonathan Smyth — is there a story behind this?

JT: Well it's nothing egotistical! I don't mind talking about this, my mum died when

I was only 6 and well my father wasn't really that great so when I was around 20 or so I changed my name legally from Smyth to my mum's name Temples.

Sometimes on loading screens it said JON, this was just easier to handwrite and took fewer pixels!

PO: Where were you working at the time, and how did you find this work?

JT: Well when I was first creating SpellCast I had just left school. My Cousin David and I were always messing around and working on game ideas so we more or less spent all day just playing and working on my Commodore 64 at home in Monkstown, Newtownabbey around 7 miles outside Belfast.
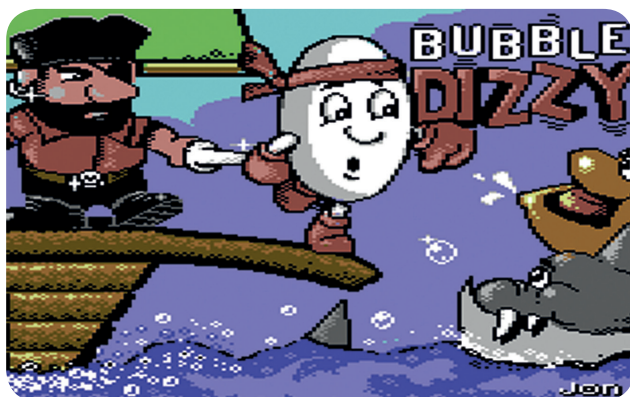
My Cousin then got an interview and a job at Northern Ireland's Choice Software and when he showed my graphic portfolio to them they were

very impressed. David and I did a test for New Zealand Story for the C64 but Ocean decided to do it in house in England. When David left Choice Software we designed our first game CJ's Elephant Antics which not only was a great success, it also put me on the radar for Codemasters, Zeppelin Games etc. My only problem was I had to turn down some great games as I had to work on one at a time.

PO: What art package or packages did you use to create the graphics?

JT: For larger sprite enemies I think I used SilverBird's Graphic Editor in combination with Anthony Crowther's Editor. For maps, I used my cousins block editor pulling the character set in from A. Crowther's editor.

My loading screens were created using Mouse and

it have been and why?

JT: I was, and still am, a big 'V' the series sci-fi fan and I designed 'V' graphics with my poor coding skills to showcase to Ocean to see if we could do another Commodore 64 version of the game (as the original was so bad!) but sadly nothing ever happened.

I felt David and I could have designed a better version that complement the series with lizards, shuttles and the proper cast. Oh I would still love the chance!

PO: Did you create graphics for other computers at the time and if so which?

JT: I worked on the Commodore Amiga, Atari ST for Codemasters CJ's Elephant Antics and the Commodore Amiga for Thalamus's Nobby the Aardvark sadly never released.

PO: What do you feel about the graphic work you did almost 30 years ago?

JT: I feel now, more than ever that the Commodore 64 graphics I created were better than I thought at the time. I never thought I was as good as say DOK, Hugh Riley and Bob Stevenson, but from the magazines and people I chat or meet and the wonderful memories some of them tell me, it makes me feel proud that something I jointly created holds a special happy time in their childhood. I once had an interview for a graphic design job and I mentioned my gaming history.

Cheese with the Commodore 64 mouse. I loved designing loading screens with the mouse as it was so relaxing and so much better than using the cursor keys.

PO: Did you have any special hardware that really helped you, maybe a good quality Commodore monitor — with composite inputs?

JT: I had a Commodore 64C, a 13" Sony Trinatron CRT TV and a 1541 drive which my cousin David sold me as he wanted the newer drive for his Commodore 128.

PO: As with all 8-bit computers there were many colour restrictions. Can you briefly explain the constraints within which you had to work.

JT: The Commodore 64 limited the artists to 16 colours in full colour mode on loading screens but depending on the scrolling, coder etc most game maps and sprites were I think 3-4 colours including the background colour as in CJ's Elephant Antics.

In Nobby the Aardvark, David's brilliant coding shifted a full 16 colours smoothly in all directions. (I may be wrong as it's so long ago!).

PO: If there was one C64 you wish you could have done the graphics for — what would

The boss jumped up and said CJ's Elephant Antics was his favourite game and give me the job. He brought the game in and got me to sign it.

PO: That's brilliant! Is that the game you are most proud of?

JT: Yes, it has to be CJ's Elephant Antics. It was the game that catupulted David Clarke, Ashley Hogg and I into the gaming world. It ended pretty high up in the gaming charts too and received a ZZap! 64 Gold medal award and other magazine accolades.

PO: Congratulations! Do you have any funny stories about those times and the games you worked on?

JT: I was once in the Virgin Mega Store in Belfast looking at my games on the shelf and these small school kids were looking at CJ's Elephant Antics and one said 'That game looks awful'. I quickly turned around and said 'I did those graphics!', to the Belfast reply of 'Do you think I floated up the river in a bubble mister?'. He never believed me!!!

JT: Oh and the other funny story was the boss of Thalamus came to see us from England one day and when he came to our offices in Belfast a large British army convoy of land rovers, armed soldiers in riot gear and an armoured saracen went past.

He turned a funny shade and couldn't get back on the plane quick enough.

PO: Did you ever do work that you were really proud of that never saw the light of day - perhaps you could share it here?

JT: I did concept graphics for a 'V' game that I wanted to show Ocean, as they had the rights at the time, but nothing ever happened. I feel sad about this one as I felt the released game could have had so much more of the TV elements and action in it.

PO: Great to hear! So what are you doing these days?

JT: I'm a freelance illustrator and animator www.jonathantemples.co.uk plus my friend Philip Orr and I are designing an iOS game Dr Frank'N"Stink and an iOS and Android children's comic app.

PO: Sound interesting, I look forward to seeing that. Thank you again for joining me Jonathan and allowing me to grill you!

Good luck with getting lots of graphic gigs in the future. We look forward to seeing more of your work.

How can people reach you if they are interested in learning more or working with you?

JT: If anyone needs pixel art or even 2D vector gaming art, well just drop me a line!

Above: Thos hexahonal tiles that give Space Moguls a slightly different feel to MULE.

THAT ANDREW FISHER IS A SPACE MOGUL I TELL YA! HERE HE TELLS US ALL ABOUT A NEW SPACE GAME, CALLED...ERMMM...

Your Space Moguls entrepreneur package contains everything you need — a floppy disk or data cartridge, a ticket to space and your trading license.

Four competitors of various species board the Space Yacht, ready to gather resources from one of four planets — the Earth-like Alia Terra, Mars, the freezing Winternus and boiling hot Planet 46C. Once the yacht lands, the players will have a number of turns to buy land, place droids and trade to earn the most cash.

A turn starts with the Land Grant allowing each player to buy a new tile of land. The random Land Auction may grant the opportunity to bid on an extra tile. The map starts out partially obscured and more tiles are revealed as play progresses. Each player then enters the town to buy the all-important droids. These can be equipped to harvest food or energy, collect materials (necessary in later turns to build more droids), or to mine for ore or rare materials — the terrain of a tile determines what it is best to gather there. Occasionally a creature known as a Grumpling can be seen on the map and can be captured for various bonuses. Random events — for example, a droid needing repairs or a fan sending cookies — will affect the current player; or more drastically, planet-wide events such as space bees or a storm can affect everyone and the resources gathered. Once all players have moved, the computer calculates how
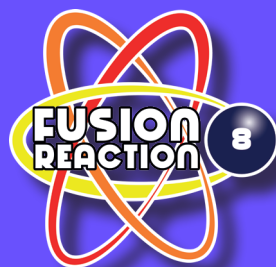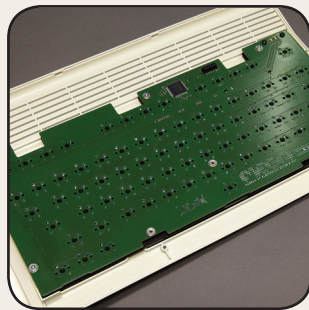
many resources each droid has collected that turn.

In the trading sequence, for each type of resource, players can buy (moving upwards) or sell (move downwards). The graph shows required resources (food and energy) for the next turn. Where one or more players meet, a trade is done at the current value; reaching the top or bottom trades with the planet's shop at a set price. The turn summary shows the money and assets value for each player, and at the end of the chosen number of turns

the space yacht returns to pick up the players before the ultimate winner is declared.

MULE with fancy graphics would be an accurate first impression of Space Moguls; no bad thing considering how much Ozark Softscape's original is adored by fans. The most noticeable difference between the two is the use of hexagons instead of squares that would fundamentally change your overall gameplan had they also retained some of MULE's deeper aspects such as economies of scale and letting droids run riot. As it stands it's less strategically complex despite the addition of the new materials resource,

four different planets, fog, competitive AI, and a variety of gameplay customisations. MULE Lite isn't the correct term, as all the new features offset some of the negatives, they set it apart as its own title, and it is more beginner friendly as a result. And yet, despite the snazzy graphics, something about Space Moguls just does not hit the same gaming notes as its inspiration.

PAUL GARDNER-STEPHEN, MEGA MEMBER AND SLIGHTLY MAD SCIENTIST TELLS US ABOUT THE ORIGINS OF THE MEGA65

The MEGA65 project originally came out of my plan to make a C64 accelerator, from way back in 1999 or so.

I had discovered an interesting way to have a write-through cache, that would allow the video display to always be correct, without having to slow the CPU down when writing to memory. I then basically just waited until FPGAs (the kind of reprogrammable chip we use in the MEGA65) were big and cheap enough to be able to do what I wanted to. Then the project morphed into re-creating the C65, as I had owned one until around 2010, and decided that I missed having it around. That was probably around 2014. Then in 2015, the folks at MEGA discovered what I was doing, and asked if I would like to team up with them. And the rest, as they say, is history.

In the early days, I really didn't expect that we would end up with a complete machine that looks like the C65. Instead, the focus was on using cheap FPGA educational boards, intended

for University students, so that people could build their own C65-clone at home. But this is one of many areas where joining forces with MEGA has let the project go much further than I could have gone alone. We now have custom motherboards, mechanical keyboards and cases, and the MEGA65 prototypes now look just like the original C65 prototypes — right down to the working floppy drive.

We purposely steered clear of anything that was not 'pure 8-bit' in creating the MEGA65. There are plenty of other retro-computing platforms out there that have made the decision to minimise costs, which really means being forced to emulate using a 'big' processor. We didn't want to be one of those. We wanted to really bring the C65 to completion, and make it available to folks to use and enjoy. This meant that all sorts of things had to be created from scratch that we could have otherwise just

picked up. This includes the SD card interface (and the FAT32 file system we had to write in 6502 assembly!), the 3.5" floppy drive controller, the ethernet interface and all sorts of other things. We have no regrets in having taken this path, because the MEGA65 is now simply the most wonderful and amazing 8-bit computer. There is nothing like it, and there is unlikely to be anything like it again, because it simply doesn't make financial sense to do what we have done. The MEGA65 is a labour of love, with several person-years of effort to make it what it is.

We can safely say that no 32-bit processors get harmed in the manufacture of a MEGA65. It is 8-bit all the way down. Are we insane to make the MEGA65 in 2019? Yes, we are. And we're loving it!

You can read more about the Mega65 on the project website — http://mega65.org/
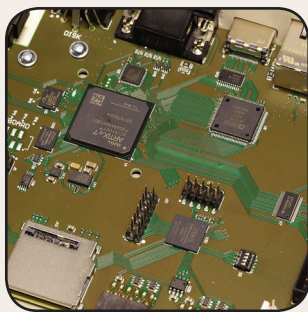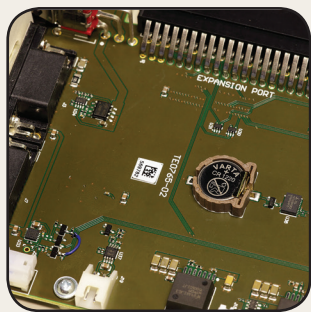
The Museum of Electronic Games & Art (or MEGA for short) is dedicated to preservation of our digital cultural heritage. We love picking things that are rare, obsolete and almost forgotten and then present them to a wider audience. Whilst thinking which exotic and exciting platforms was potent enough to host a proper old school demo, we decided on the Commodore C65. The question was could we deliver perfect emulation or maybe even recreate the C65 in hardware in a way that would allow everyone to enjoy the platform? MEGA have built quite a lot of hardware in the past few years, but a whole computer with proper case and keyboard? This was and still is the most demanding project we have ever started, and we are focussed on finishing it in the best possible way — best for the community of retro computer lovers. The MEGA65 is so unique because it is driven by pure open-source and nerd spirit with a professional management that, unlike any other project of this size, the development is not limited by time or costs. On the way to finishing it will try involve the entire retro community by publishing everything as open-source. The Mega65 will truly be a system for retro computer fans everywhere.

Detlef Hastik, MEGA Museum of Electronic Games & Arts.
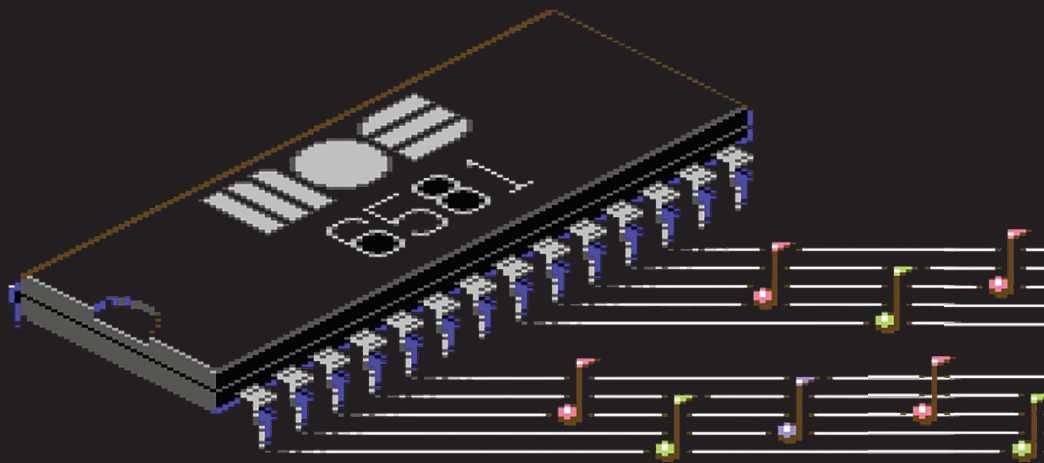
Everyone knows that the C64 has an amazing sound chip hidden inside its unassuming case, but which game had the best music? We asked FUSION and Zzap! 64 contributors Andrew Fisher, Robin Hogg, Paul Morrison and Mat Allen to share their favourite C64 tunes. Here's what they had to say.

WIZBALL (Martin Galway) is my favourite SID. Martin's epic Parallax title tune was followed by him joining Sensible Software for a time, collaborating on the incredible blend of shoot 'em up and "painting by numbers" that is Wizball. Jon Hare and Chris Yates had been in a band together before forming Sensible, so used their guitar skills to inspire Martin. Chris got the lead guitar wailing for the "game over" jingle and Jon laid down some mean bass licks that underscore the bonus section. With some great sound FX, including the "filth raid" siren, and the celebratory rumba of the high score tune, the title tune itself still stands proud. In some ways it complements Parallax, building up layers of sounds before a calmer, darker section. Even among Martin's best work this Wizball soundtrack is something special. I recorded it to cassette to listen to time and again, and still love it.

Combat School has a great soundtrack. Well, I dont recall any of it to be honest, but I do recall the loading music, specifcally Ocean Loader 3. The creator Peter Clarke took Martin Galway's version 2 further and created a frenetic tune that really pumps you up for the delights of the game to come. I loved it so much that I often stopped the tape (see Combat School above) and let the loader play repeatedly, much to the chagrin of the Zzap! team. Yes, there are many many awesome soundtracks to choose from, including Peter's own rendition of Bubble Bobble, but my fondest memories are of Ocean Loader 3, my go-to SID tune even now.
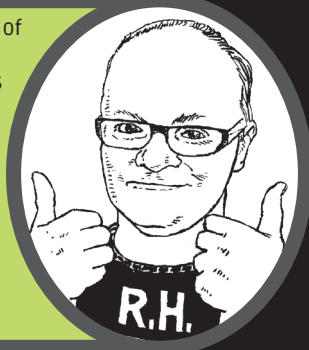
"My name is SID"
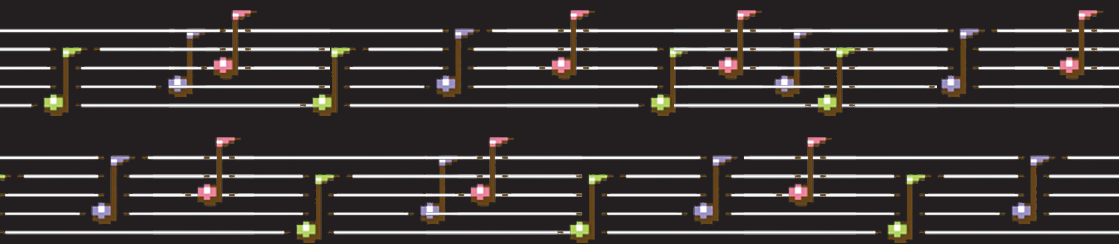
Music is what made me want a C64. Master of the Lamps was the game that seduced me and from there I was never going back. So many games made a huge impact on me, to the extent that I credit C64 musicians for the fact I listen to mostly instrumental music today. There was one man who made his mark above all others, and that man was Rob Hubbard. Games such as Sanxion, Skate or Die, The Human Race and Crazy Comets will forever be my earworms. There is one game, though, that hit me like a ton of bricks when I first heard it, and that game is Monty on the Run. At the time, ZZAP! 64 called it "aurally am-m-m-mazing, techically perfect". It's impossible to argue with that. Rob himself said he thought people would be getting sick of Monty by now. I never will.

Trying to pick a favourite single track is near impossible, so I'm subverting the question slightly and going with Last Ninja 2 by Matt Gray, arguably the finest suite of tracks for the C64. Not only is every single one of the thirteen pieces excellent, but there is a style and mood for everyone to enjoy, from Oriental rock, horror, electronic, funk and more. Matt could not only spin a terrific melody line, but what makes many of the tracks to me is the percussion, thumping drums and bass rhythms, which had been evident in previous games such as Driller and Quedex. Sure, there are one or two cribs from existing music (such as Tangerine Dream) but what composer didn't have influences? Subtly squeezing in riffs from the original Last Ninja inside the Mansion theme was the cherry on the top, and probably my favourite piece in the entire game.